

B<sup>2</sup>  
cont to about 3% by weight of a dispersing agent, is present in at least one of the first and second packs; and

(c) a container for housing the first and second packs.

11. (Twice Amended) A method for improving the wash fastness of dyed hair comprising:

B<sup>3</sup>  
(a) applying to the hair a composition comprising from about 0.1 to about 5% by weight of phytantriol dissolved in about 0.1 to about 3% by weight of a dispersing agent and an aqueous solution of a hair dye containing from about 0.1 to about 5% by weight of a conventional hair dye.

#### REMARKS

Claims 1 and 11 have been amended to recite "an aqueous solution of a hair dye containing from about 0.1 to about 5% by weight of a conventional hair dye." Support for these amendments is found in the specification at, for example, page 3, line 24 to page 4, line 20; page 4, lines 28-31; and in Examples 1 and 3.

Claims 1 and 11 also have been amended to remove a comma. Support for these amendments is found in the specification at, for example, page 4, lines 28-31 and in Example 1, especially at page 5, lines 27-28.

Claim 9 has been amended to recite "a conventional hair dye." Support for this amendment is found in the specification at, for example, page 3, line 24 to page 4, line 20 and in Example 3.

It is submitted that no new matter has been introduced by the foregoing amendments. Approval and entry of the amendments is respectfully solicited.

### **Indefiniteness Rejection**

Claims 1-12 were rejected under 35 USC §112, second paragraph. (Paper No. 6<sup>1</sup> at 5.) In making the rejection, the Examiner asserted that the "recitation of 'hair colorant composition comprising from about .1 to about 5% by weight phytantriol dissolved in about .1% to about 3% by weight of a dispersing agent, and from about .1 to about 5% of a hair dye composition consisting essentially of a color molecule' in the instant independent claims are confusing." (*Id.*)

Although the rejection is not agreed with, in order to further prosecution, claims 1 and 11 have been amended and no longer contain the comma, which the Examiner asserts is "confusing." Accordingly, the rejection has been rendered moot and should be withdrawn.

### **Written Description Rejection**

Claims 1-12 were rejected under 35 USC §112, first paragraph. In making the rejection, the Examiner contended that the term "consisting essentially of a color molecule" does not find support in the specification. (Paper No. 6 at 6.)

With a view toward furthering prosecution, claims 1, 9, and 11 have been amended to remove the phrase "consisting essentially of a color molecule." Accordingly, the rejection has been rendered moot and should be withdrawn.

### Obviousness Rejections

Claims 1-8, 11, and 12 were rejected under 35 USC §103(a) as being unpatentable over Ribier *et al.*, U.S. Patent No. 5,834,013 ("Ribier"), in view of Krutak *et al.*, U.S. Patent No. 5,951,718 ("Krutak"). (Paper No. 6 at 2.)

For the reasons set forth below the rejection, respectfully is traversed.

Ribier discloses "a cosmetic or dermatological composition for topical use, in the form of an aqueous and **stable dispersion of cubic gel particles** based on 3,7,11,15-tetramethyl-1,2,3-hexadecanetriol or phytanetriol and containing a water-soluble surface active agent ...." (Col. 1, lines 10-15). Ribier discloses that "it was possible to obtain stable cosmetic or dermatological compositions containing **cubic gel particles in dispersed form**, which have both hydrophilic and lipophilic domains enabling hydrophilic and lipophilic **active principles to be included therein**, these particles having a **reduced and controllable lattice** which makes it possible to **modulate the availability of the active** principles sequestered. These compositions thus constitute **an ideal support for active principles** of opposite and incompatible polarity or of complementary or even synergistic activity." (Col. 2, lines 11-20).

Among the active principles that may be incorporated into the cubic gel particles, Ribier discloses natural dyes (Col. 6, lines 7-11) and hair dyes (Col. 6, lines 51-54). To make the cubic gel particles, special process steps are disclosed including homogenizing a mixture of phytanetriol, water and Polysorbate 40 to form a dispersion of the cubic gel particles. (See Example 1, Col. 7, lines 31-39).

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<sup>1</sup> The cover page of the Office Action dated July 17, 2002, indicates that the Paper Number is 6. However, the Office Action Summary indicates that the Action is Paper Number 5. For clarity, we note that the instant Office Action is referred to as Paper No. 6 throughout this response.

Krutak discloses compositions and processes for non-permanently coloring keratinous fibers using sulfo-containing, water-dispersible, "**colored polymers** wherein the colorant moiety is incorporated into or onto a carbonyloxy and/or carbonylamide backbone of the polymer." (Col. 1, lines 14-16). Krutak discloses that "[t]he polymers are **uniquely designed** to offer cosmetically desirable color coating on hair and to be easily dispersible in hot water, yet offer excellent resistance to redispersion in water at room temperature." (*Id.* at lines 16-21).

Krutak discloses that the structure of the colorant compounds may be represented as:



where Col is the residue of a colorant and X is a condensable carbonyloxy-reactive or carbonylamide-reactive substituent. (Col. 7, lines 8-13). Krutak also discloses that anthraquinones are one of the "preferred" classes of colorants. (*Id.* at line 5-6).

The Examiner "maintained" this rejection from the previous Office Action (Paper No. 3) and provided no additional analysis except to comment on our prior Response. Accordingly, we look to Paper No. 3 for the substance of the rejection.

In making the rejection, the Examiner asserted that Ribier discloses "a cosmetic or dermatological composition containing phytantriol and a dispersing agent." (Paper No. 3 at 3). The Examiner acknowledged, however, that Ribier does not disclose the use of anthraquinone dyes or the instant amount of hair dye. (*Id.*). To fill this acknowledged gap, the Examiner relied on Krutak as disclosing the use of "anthraquinone dyes and the several colors that it imparts on the hair and the instant amount." (*Id.*). The Examiner concluded that "it would have been obvious ... to

combine the teachings of Ribier *et al.* and Krutak *et al.* since Ribier *et al.* disclose the use of semi-permanent dyes and Krutak *et al.* disclose that an anthraquinone dye is a semi-permanent dye known in the art." (*Id.*).

In the instant Office Action, the Examiner asserts that "the instant claim language does not exclude cubic particles in the phytantriol and dispersing agent part of the composition." (Paper No. 6 at 2-3.) The Examiner further asserts that Ribier discloses that "these compositions ... are obtained by dispersing cubic gel particles based on phytantriol in an aqueous medium in the presence of at least one water-soluble surface active agent which has a fatty chain" on column 2, lines 20-25, which reads on the instant claims." (*Id.* at 3.)

The Examiner explains that "Krutak is relied upon for its disclosure of the conventional knowledge and use of semi-permanent dyes such as anthraquinone dyes (Note column 6, beginning on line 34) and one's motivation to use the instant hair dye. Krutak discloses that the instant hair dye is very resistant to color bleeding." (*Id.*) The Examiner then concludes that "the motivation to combine Ribier and Krutak is that Ribier teaches phytantriol compositions provide hydration and stability and discloses that permanent (direct dyes) and semi-permanent (natural dyes) may be incorporated and Krutak teaches the use of anthraquinone (semi-permanent) dyes in the art and their resistance to bleeding." (*Id.* at 3-4.) The Examiner then concludes that "if a semi-permanent coloring composition with instant colors without bleeding, one would look to Krutak who discloses the conventional use of the instant dyes." (*Id.* at 4.)

Initially, we note that the Examiner bears the burden to come forth with a *prima facie* case of unpatentability. (*In re Glaug*, 62 USPQ2d 1151, 1152 (Fed. Cir.

2002); *In re Oetiker*, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992); and *In re Piasecki*, 223 USPQ 785, 788 (Fed. Cir. 1984)). If the PTO fails to meet its burden, then the applicant is entitled to a patent. (*In re Glaug*, 62 USPQ2d at 1152.).

When patentability turns on the question of obviousness, as here, the search for and analysis of the prior art by the PTO must include evidence relevant to the finding of whether there is a teaching, motivation, or suggestion to select and combine the documents relied on by the Examiner as evidence of obviousness. *McGinley v. Franklin Sports*, 60 USPQ2d 1001, 1008 (Fed. Cir. 2001).

Contrary to the Examiner's contention, there is no disclosure in Ribier or Krutak which would motivate one to combine the documents in the manner suggested. The Examiner asserts that Krutak discloses "the the use of anthraquinone (semi-permanent) dyes in the art and their resistance to bleeding." (Paper No. 6 at 4.) The Examiner has misapprehended the disclosure of Krutak. The Examiner points to the Krutak disclosure starting at column 6, line 34, which reads:

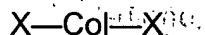
Suitable ***thermally stable colorants*** are described in the aforementioned prior art references, such as U.S. Pat. No. 4,804,719, the disclosure of which is incorporated herein by reference, and preferably selected from the classes of:

methines; bis-methines; anthraquinones;  
3H-dibenz[f,i]isoquinoline-2,7-diones (anthrapyridones);  
triphenodioxazines;  
5,12-dihydroquinoxalino[2,3-b]phenazines (fluorindines);  
phthaloylpyrrocolines;  
2H-1-benzopyran-2-ones (coumarins); 3H-naphtho[2,1-b]pyran-2-ones (benzocoumarins);  
4-amino-1,8 naphthalimides; thioxanthene-9-ones; 2,5(3)-arylamino-terephthalic acids (or esters); benzo[f]pyrido[1,2-a]indole-6,11-diones; quinophthalones;  
7H-benz(de)anthracene-7-ones (benzanthrones);  
7H-benzo[e]perimidin-7-ones (anthraprimidines);  
6,15-dihydro-5,9,14,18-anthrazinetetrone (indanthrones);  
7H-dibenz[f,i]isoquinoline-7-ones (anthrapyridines); 6H,18H-

pyrido[1,2-a: 3,4-b']diindole-6,13-diones, diindolo[3,2,1-de:3',2',1'-ij][1,5]naphthpyridin-6,13-diones;  
 naphtha[1',2',3':4,5]quino[2,1-b]quinazoline-5,10diones;  
 benzo[f]pyrido[1,2-a]indole-6,11-diones; 7H-benzimidazo[2,1-a][de]isoquinolin-7-one;  
 5H-benzol[a]phenoxazine-5-ones; 5H-benzo[a]phenothiazine-5-ones;  
 benzo[f]pyrido[1,2-a]indole-6,11-diones; 3,6-diaminopyromellitic acid diimides;  
 naphthalene[1:4:5:8] tetra carboxylic bis imides; 3-aryl-2,5-dioxypyrrolines; perinones;  
 perylenes; phthalocyanines; anthraisothiazoles; quinacridones; anthrapyrimidones;  
 phthaloylacridones; phthaloylphenothiazines and phthaloylphenothiazine-S,S-dioxides.

Particularly preferred classes of colorants are the methines, bis-methines, anthrapyridones, anthraquinones and phthalocyanines.

The **colorant compounds** described above may be represented by the formula:



wherein **Col is the residue of one of the types of colorants** set forth above and X is a condensable carbonyloxy-reactive or carbonylamide-reactive substituent..." (Col. 6, line 34 – col. 7, line 13.)

Contrary to Examiner's contention, as the passage above makes clear, the anthraquinones are considered to be "colorants," which are incorporated into the "colorant compounds" of Krutak. Krutak is absolutely silent as to the bleeding resistance of anthraquinone colorants. It is the polymeric compounds ("colorant compounds") of Krutak which are disclosed to be resistant to bleeding:

It is **another object of the invention to provide compositions** and a method for non-permanently coloring hair, wherein the colored hair **shows minimal color bleed** upon exposure to ambient temperature water, virtually no color rub-off and excellent resistance to flaking during combing and brushing. (Col 4, lines 10-16.)

Moreover, the "colorants" listed above are taken from the disclosure of U.S. Patent No. 4,804,719 (the "719 patent"). But as Krutak notes

the '719 patent does not disclose the coloring of hair or any other keratinous fiber.

**U.S. Pat. No. 4,804,719 discloses polymeric compositions** which contain carbonyloxy and carbonylamide links, particularly polyesters and polyesteramides, having water solubilizing sulfonate groups and **colorants, copolymerized onto or into the polymer backbone.** It is indicated in this patent that these polymers are **useful in adhesives, coating materials, films and packaging materials.** It is also stated therein that aqueous dispersions of these materials have **utility as inks, paints and other industrial coatings,** all of which are intended to be permanent in nature. **No disclosure is made relating to the specific art of dyeing keratinous fibers, non-permanently or otherwise.** (Col. 1, line 65 – col. 2, line 9.)

Furthermore, Krutak notes that the colorants are polymerized into the polymer backbone. Accordingly, Krutak does not disclose that the “colorants” themselves may act independently as dyes, only that they may be used as a substituent in a polymer dye, such as that of Krutak or the '719 patent.

Accordingly, the Examiner erred in her characterization of Krutak in at least three ways:

- 1) Krutak makes no disclosure of the color bleeding properties, whether good or bad, of anthraquinones;
- 2) Krutak does not disclose anthraquinones as dyes in any manner, but rather as “colorants” which are part of polymer dyes; and
- 3) Krutak does not disclose the use of anthraquinones as dyes to color hair.

In sum, the Examiner has misinterpreted the disclosure of Krutak. And, in doing so has created a supposed motivation to combine the cited documents where none actually exists. This misinterpretation of Krutak has lead the Examiner to



conclude that Ribier and Krutak, in combination, disclose or suggest the claimed invention. Moreover, as demonstrated above if properly interpreted, Krutak does not fill the gap in Ribier acknowledged by the Examiner.

In short, this rejection is based on erroneous factual findings. These erroneous findings obviate both the motivation to combine the cited documents and the assertion that the documents, even in combination, disclose or suggest the claimed invention. Accordingly, for this reason alone, the rejection is both factually and legally deficient and must be withdrawn.

Furthermore, the rejection fails to identify *why* one skilled in this art would select Ribier as a starting point for making a hair dye composition as claimed. Ribier discloses cosmetic or dermatological compositions and methods for making such compositions containing specifically designed delivery vehicles - "**dispersion[s] of cubic gel particles based on phytantriol**" - as "support[s]" for various active agents. (Col. 2, lines 10-29). The rejection identifies no disclosure or technical reasoning why one skilled in this art would look to Ribier as a starting point for making a hair colorant composition as claimed wherein the phytantriol is **dissolved in** a dispersing agent and a hair dye.

The dissolution of the phytantriol in the water and dispersing agent as claimed produces an aqueous solution which is physically completely different from the dispersions of Ribier. Ribier discloses forming "cubic gel particles," something that is impossible to accomplish with the solution of the claimed invention. The compositions of Ribier can be characterized by the size of the particles in the dispersion. (See, Col. 5,

lines 14-19), something that is, again, impossible to do with the solutions of the claimed invention.

Further, Ribier discloses that:

The cosmetic or dermatological compositions in the form of a dispersion of cubic gel particles as defined above are obtained by **breaking**, using a homogenizer, **a cubic gel** based on phytanetriol, water and at least one water-soluble surface active agent which has a fatty chain... (Col. 5, lines 1-5.)

Once again, this is impossible with the solutions of the claimed invention. The solutions of the claimed invention cannot form a cubic gel, and therefore no dispersion of cubic gel particles may be formed by breaking a cubic gel. Homogenizing the solutions of the present invention would have no noticeable effect.

In this instance, the Examiner has apparently misinterpreted the language of the claimed invention. The Examiner asserts that "the instant claim language does not exclude cubic particles ...." (Paper No. 6, at 2.) Simply stated, we respectfully submit that the Examiner is wrong. The claims recite a composition wherein "from about 0.1 to about 5% by weight of phytantriol dissolved in about 0.1% to about 3% by weight of a dispersing agent and an aqueous solution of a hair dye containing from about 0.1 to about 5% by weight of a conventional hair dye." (See, Claims 1 and 11.) Such a solution is physically distinct from the dispersions required in Ribier. As noted above, the solutions of the claimed invention **cannot** form the cubic gel dispersions required by Ribier. Accordingly, contrary to the Examiner's contention, the claim language excludes cubic particles.

Accordingly, the rejection is factually deficient, and for this additional reason, should be withdrawn.

Claims 9-10 were rejected under 35 USC §103(a) as being unpatentable over Ribier, in view of Wenke *et al.* U.S. Patent No. 5,628,799 ("Wenke"). (Paper No. 6 at 4.)

For the reasons set forth below the rejection, respectfully is traversed.

Ribier is summarized above.

Wenke discloses a process for dying hair using dopa (dihydroxyphenylalanine) and/or substituted dopa compounds to generate melanin pigments for use as a permanent hair dye. (Col. 1, lines 16-19). Wenke discloses that the process works through "a series of reactions leading to the formation of one or more melanin precursors capable of diffusing into the hair shaft. Within the hair shaft, the precursor is oxidized by air to melanin, which is incapable of diffusion out of the hair shaft." (Col. 5, lines 10-14).

Wenke discloses that "the color obtained by oxidation of the dopa species can be significantly modified by including direct dyes and, if desired, primary intermediates, and/or couplers in the reaction medium." (Col. 4, line 66 - Col. 5, line 2). Wenke also discloses hair dying kit products, wherein the kit includes "a first container containing a dopa species solution containing the direct dye or, optionally the primary intermediate and/or coupler, and a second container containing the oxidant solution." (Col. 12, lines 12-17).

The Examiner "maintained" the rejection from the previous Office Action (Paper No. 3) and again provided no additional analysis except to comment on our prior Response. Accordingly, we again look to Paper No. 3 for the substance of the rejection.

In making the rejection, the Examiner asserted that Ribier discloses a cosmetic or dermatological composition containing phytantriol in a dispersing agent and a composition containing an active agent such as a permanent hair dye with an oxidation coupler and base. (Paper No. 3 at 4). The Examiner acknowledged, however, that Ribier "do not teach a specific hair dye kit where the primary reactor (oxidizing agent) and secondary reactor (coupler) are in separate packs." (*Id.*). To fill this acknowledged gap, the Examiner relied on Wenke as disclosing "a hair dye kit in which the oxidizing agent and a coupler are pre-measured in different containers and mixed together by the user." (*Id.*).

In the instant Office Action, the Examiner asserts that Wenke discloses "a permant dye in a kit that separates the reactants so as to prevent reaction of the product before application (Note column 12, lines 1-10)." (Paper No. 6 at 4.) The Examiner then concludes that "one would be motivated to use Wenke's kit to prevent the reactants of Ribier's direct dyes from mixing before the required time." (*Id.*)

As noted above, the Examiner bears the burden to set forth a *prima facie* case of unpatentability. (*In re Glaug*, 62 USPQ2d at 1152; *In re Oetiker*, 24 USPQ2d at 1444; and *In re Piasecki*, 223 USPQ at 788). When, as here, the rejection is based on a combination of documents, the Examiner must identify where in the record there is a disclosure, teaching or suggestion to combine the documents in the manner set forth in the rejection. The rejection, however, dispenses with this requirement in a single sentence: "one would be motivated to use Wenke's kit to prevent the reactants of Ribier's direct dyes from mixing before the required time." (Paper No. 6 at 4).

Notwithstanding the content of this one sentence, we respectfully submit that one sentence does not meet the "thorough and searching" standard required by the Federal Circuit of the factual inquiry into whether there is a sufficient motivation to combine the documents. *In re Lee*, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002.) Furthermore, the Examiner's reliance on "column 12, lines 1-10" (reproduced below) to support the rejection is misplaced.

... in order to form the hair dye composition and to apply the dye composition to the hair for a period of less than about one hour. The process is generally conducted at room temperature, although elevated temperatures obtained by means of a hair dryer, especially in a hair salon, may be used. The user may also place a cap over the hair following the application of the dye composition to the hair, body heat being retained within the cap. Following completion of the contact step, the hair is shampooed to remove excess composition including surface melanin from the hair.

This selection from Wenke relied on by the rejection provides no evidence that the permanent hair coloring compositions/methods disclosed by Wenke would benefit by being combined with the phytantriol cubic gel particle delivery system of Ribier. Rather, the excerpt relied upon by the Examiner simply teaches temperature ranges for the "contacting step" as well as a washing step. Thus, the motivation, teaching or suggestion required by Federal Circuit precedent to combine Ribier with Wenke simply is absent from the rejection. Thus, because the rejection is not based on objective evidence of record, it cannot stand. For this reason alone, the rejection should be withdrawn.

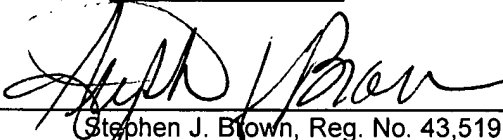
Moreover, Claim 9 recites that the phytantriol is **dissolved in** the dispersing agent and is present in at least one of the first or second packs. As discussed above, such a solution is physically distinct from the dispersions required by

Ribier. The solutions of the claimed invention cannot form the cubic gel dispersions required by Ribier. Therefore, the claimed invention **excludes** cubic particles.

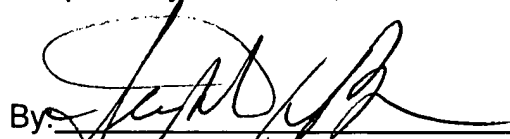
Accordingly, even if Ribier and Wenke are properly combinable, which is not admitted, a gap still exists which is not remedied by Wenke. For this reason also, the rejection should be withdrawn.

Accordingly, for the reasons set forth above, entry of the amendments, withdrawal of the rejections, and allowance of the claims is respectfully requested. If the Examiner has any questions regarding this paper, please contact the undersigned attorney.

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Box AF, Commissioner for Patents, Washington, D.C. 20231, on December 16, 2002.

  
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Respectfully submitted,

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**MARKED-UP VERSION OF AMENDED CLAIMS**

1. (Twice Amended) A hair colorant composition comprising from about 0.1 to about 5% by weight of phytantriol dissolved in about 0.1% to about 3% by weight of a dispersing agent[,] and an aqueous solution of a hair dye containing from about 0.1 to about 5% by weight of a conventional hair dye [composition consisting essentially of a color molecule].

9. (Twice Amended) A kit for coloring hair comprising:  
(a) a first pack comprising a primary intermediate;  
(b) a second pack comprising a secondary intermediate,  
together the first and second packs provide from about 0.1 to about 1% of a hair dye composition consisting essentially of a conventional hair dye [color molecule], wherein a composition comprising from about 0.1 to about 5% by weight of a phytantriol dissolved in about 0.1 to about 3% by weight of a dispersing agent, is present in at least one of the first and second packs; and

(c) a container for housing the first and second packs.

11. (Twice Amended) A method for improving the wash fastness of dyed hair comprising:

(a) applying to the hair a composition comprising from about 0.1 to about 5% by weight of phytantriol dissolved in about 0.1 to about 3% by weight of a dispersing agent[,] and an aqueous solution of a hair dye containing from about 0.1 to

In re Application of:  
Parent Serial No.:  
For:

Maurice Raymond Hickling  
09/734,803

**HAIR COLORANT COMPOSITION CONTAINING PHYTANTRIOL**

about 5% by weight of a conventional hair dye [composition consisting essentially of a color molecule].